LUMBER GRADE, YIELD AND STIFFNESS PROPERTIES OF FAST GROWING PLANTATION LOBLOLLY AND SLASH PINE

BY

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LOBLOLLY PINE TREATMENTS

B.F. GRANT MEMORIAL FOREST SPACING STUDY PLANTED 1983

800 TPA, WEED CONT., NO FERT, UNTHINNED, HARVESTED AGE 14 600 TPA, WEED CONT., NO FERT, UNTHINNED, HARVESTED AGE 14 400 TPA, WEED CONT., NO FERT, UNTHINNED, HARVESTED AGE 14

OPERATIONAL CONTROL, HANCOCK CO., PLANTED 1973 AT 605 TPA NO WEED CONT., NO FERT., THINNED 1990 TO 250 TPA, HARVESTED AT AGE 24

NUMBER OF LOBLOLLY PINE SAMPLE TREES

exampler of the second	**************************************	THE REPORT OF THE PERSON NAMED IN COLUMN 2 AND THE PERSON NAMED IN			
သ န	C 3	9	9	ÇO	CONTROL
33	0	CT	के	<u> သ</u>	800 TPA
34	Ø	7	خست خست و	10	600 TPA
29	₽	5	O	မှ	400 TPA
8 8	8 8 8	* * * * * * * * * * * * * * * * * * *	8 8 8	2 3 8 8	
TOTAL	11	10	9	Co	TREATMENT
	N.)	DBH CLASS (IN.)	DBI		
D DBH	ENT ANI	TREATM	BER BY	NTO LUM	PROCESSED INTO LUMBER BY TREATMENT AND DBH

AVERAGE TREE CHARACTERISTICS OF LOBLOLLY PINE SAMPLE TREES BY TREATMENTS

		TRE	TREATMENTS	
CHARACTERISTIC	14 YR 400 TPA	14 YR 600 TPA	14 YR 800 TPA	24 YR CONTROL
NUMBER	29	34	33	ಷ
DBH (IN.)	ဖ္	9.2	ය	9.5
TOTAL HT. (FT.)	55	62	57	72
SAW MERCH HT. (FT.)	28	29	26	ಬ್ರ
DIB @ MERCH HT. (IN.)	ST ST	OT OT	জ	نان چيد
FORM CLASS	_	72	71	75

AVERAGE WOOD SPECIFIC GRAVITY AND MOISTURE CONTENT OF LOBLOLLY PINE SAMPLE TREE SAWLOG STEMS BY TREATMENT

53	55	54	55 4	MOISTURE CONTENT (GN) (%)
4	123	2	121	MOISTURE CONTENT (DRY) (%) 121
*	43	.43	.43	SPECIFIC GRAVITY
TREATMENTS 14 YR 14 YR 24 YR 400 TPA 600 TPA 800 TPA CONTROL	TREATMENTS FR 14 YR TPA 800 TPA	TRE/ 14 YR 600 TPA	14 YR 400 TPA	WOOD PROPERTIES

AVERAGE GREEN WEIGHT OF WOOD AND WOOD AND BARK PER CUBIC FOOT OF WOOD FOR LOBLOLLY PINE SAMPLE TREE SAWLOG STEMS BY TREATMENT

WOOD & BARK / FT WOOD	WOOD / FT WOOD		• • • • • • • • • • • • • • • • • • •	
65.1	58.5	9 8 8 8	14 YR 400 TPA	
64.9	58.5	lb/ft³	14 YR 600 TPA	TRE
တ တ . သ	59.6	lb/ft³	14 YR 800 TPA	TREATMENTS
о о 	₩	9 8 8 8	14 YR 14 YR 14 YR 24 YR 400 TPA 600 TPA 800 TPA CONTROL	Oderstantsky za po posta Wolderski i statenovene pop Astronovene popular su popular su popular su popular popu

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AVERAGE BARK PROPORTION BY WEIGHT, SPECIFIC GRAVITY AND MOISTURE CONTENT OF LOBLOLLY PINE SAMPLE TREE SAWLOG STEMS BY TREATMENT	
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44.8	46.9	46.5	47.6	MOISTURE CONTENT (GN)) (%)
85.7	96.1	93	97.3	MOISTURE CONTENT (DRY) (%)
.28	.29	\$.28	SPECIFIC GRAVITY
12.2	10.3	<u>-2</u>		PROPORTION BY WT. (%)
8 8 8 8	. 00		9 9 8 8	8 ;
14 YR 24 YR 800 TFA CONTROL	14 YR 800 TPA	14 YR 600 TPA	14 YR 400 TPA	BARK PROPERTIES
	IREATMENTS	THEA		
			BY IKEAIMENI	ВҮ

STUDY LUMBER YIELDS

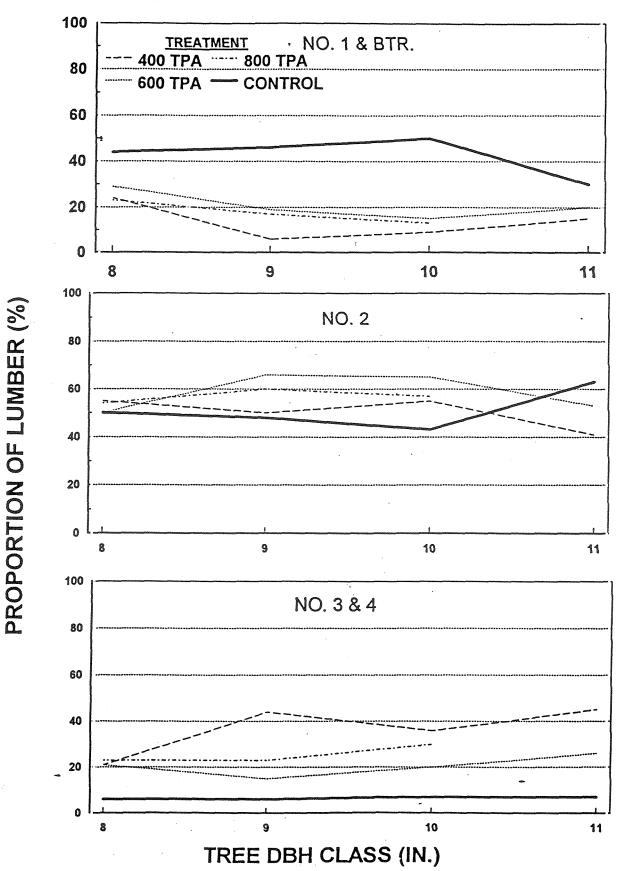
226 TREES PRODUCED 471 SAWLOGS

471 SAWLOGS PRODUCED 1,448 PIECES OF LUMBER
OR

10,432 BF MILL TALLY

1X4 - 342 PIECES = 1,242 BF 1X6 - 12 PIECES = 61 BF 2X4 - 994 PIECES = 7,747 BF 2X6 - 100 PIECES = 1,382 BF

PROPORTION OF LUMBER BY LUMBER GRADE AND DBH CLASS FOR 14 YEAR LOBLOLLY PINE CHIPPING SAW TREES PLANTED AT 400, 600 AND 800 TPA AND 24 YEAR CONTROL



STUDY LUMBER YIELDS

226 TREES PRODUCED 471 SAWLOGS

471 SAWLOGS PRODUCED 1,448 PIECES OF LUMBER

276 SAWLOGS PRODUCED 894 PIECES OF LUMBER

6,438 BF MILL TALLY

220 PIECES

784 BF 43 BF

9 PIECES

130 TREES PRODUCED 276 SAWLOGS

LOBLOLLYPINE LUMBER YIELDS

10,432 BF MILL TALLY

1X6 12 PIECES 11 61 BF

342 PIECES

11

1,242 BF

224 226 994 PIECES 100 PIECES 38 11 7,747 BF 1,382 BF

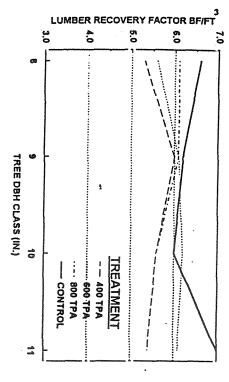
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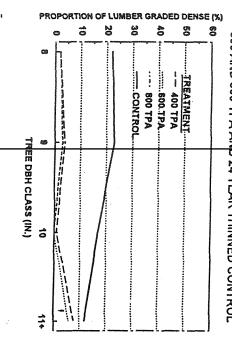
591 PIECES 74 PIECES

4,599 BF 1,012 BF

AVERAGE LUMBER RECOVERY FACTOR BY DBH CLASS FOR 14 YEAR UNTHINNED LOBLOLLY PINE PLANTED 400, 600, AND 800 TPA AND 24 YEAR THINNED CONTROL



AVERAGE PROPORTION OF LUMBER GRADED DENSE (DSS, 1D, 2D) FOR 14 YEAR UNTHINNED LOBLOLLY PINE PLANTED 400, 600 AND 800 TPA AND 24 YEAR THINNED CONTROL



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LUMBER GRADE FOR LOBLOLLY PINE CHIPPING AVERAGE PROPORTION OF LUMBER BY SAW SAMPLE TREES BY TREATMENT

	1		TREATMENTS	
LUMBER GRADE	14 YR. 400 TPA	14 YR. 600 TPA	14 YR. 800 TPA	24 YR. CONTROL
	9 9 8 8 8	8 8 8 8 8 8 8	• • • • • • • • • • • • • • • • • • • •	
NO. 1 & BTR.	14	21	19	43
NO. 2	52	59	57	50
NO. 3 & 4	34	20	24	7
			TERRETARIO PER	л (^{дар} Меретлекован захич коландат у Вименеом

AVERAGE MAXIMUM KNOT DIAMETER, AVERAGE KNOT DIAMETER, AND KNOT COUNT PER SAWLOG FOR 14 YEAR UNTHINNED LOBLOLLY PINE PLANTED 400, 600 AND 800 TPA AND 24 YEAR THINNED CONTROL
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AVG. MAX KNOT DIA (IN.)	AVG. KNOT DIAMETER (IN.)	KNOT COUNT (NO.)	CHARACTERISTICS	SAWI OG	AVERAGE MAXIMUM KNOT DIAMETER, AVERAGE KNOT DIAMETER, AND KNOT COUNT PER SAWLOG FOR 14 YEAR UNTHINNED LOBLOLLY PINE PLANTED 400, 600 AND 800 TPA AND 24 YEAR THINNED CONTROL	
A (IN.)	ER (IN.)				IAXIMU ND KNO DBLOLI	٠
2.0	-	23	14 YR 400 TPA		M KNOT OT COUN LY PINE I	
1.7	.	. 24	14 YR 600 TPA	TREATMENT	MAXIMUM KNOT DIAMETER, AVER AND KNOT COUNT PER SAWLOG F OBLOLLY PINE PLANTED 400, 600 AND 24 YEAR THINNED CONTROL	
1.7	0.9	24	14 YR 800 TPA	FUT	VLOG FOI 100, 600 AI NTROL	
:3	0.8	ಹ	24 YR. CONTROL		E KNOT R 14 YEAR ND 800 TPA	
 ·						

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AVERAGE PROPORTION OF TOTAL LUMBER GRADED BELOW NO. 2 BY CAUSAL TYPE DEFECT FOR 14 YEAR UNTHINNED LOBLOLLY PINE PLANTED 400, 600 AND 800 TPA AND 24 YEAR THINNED CONTROL

	14 YR	1	14 YR	24 YR
DEFECT TYPE	400 TPA	600 TPA	800 TPA	800 TPA CONTROL
•	8 8 8		6	0 0 0
WANE, SKIP	©	ယ	7	2
DRYING (BOW, TWIST, CROOK)	7	*	ယ	
< 16 % LATEWOOD	တ	Ċħ	00	0.5
KNOTS	a J	8	,	

AVERAGE MOE BASED ON E-COMPUTER FOR LOBLOLLY PINE 8/4 LUMBER BY VISUAL LUMBER GRADE AND PROPORTION OF LUMBER WITH MOE BELOW AVERAGE REQUIRED FOR GRADE BY TREATMENT

3 WHEN IN COMPLIANCE APPROX, 50% OF LUMBER WOULD BE BELOW REQUIRED GRADE AVG.MOE	% BELOW GRADE MOE 100 100 100 6	AVG. LUMBER MOE (MPSI) 0.83 0.84 0.83 , 1.2	GRADE NO. 3 - AVG. MOE REQUIRED 1.4 MPSI	% BELOW GRADE MOE 100 99 99 8		GRADE NO. 2- AVG. MOE REQUIRED 1.6 MPSI	% BELOW GRADE MOE J 100 100 100 8	AVG. LUMBER MOE (MPSI) 0.82 0.92 0.93 1.2	GRADE NO. 1 - AVG. MOE REQUIRED 1.7 MPSI	400 TPA 600 TPA 600 TPA CONT	14 YR. 14 YR.	- REALMEN
·	64	1.25		88	1.25		94	1.28		CONTROL	24 YR.	

PROPORTION OF NO. 2 & BTR 8/4 LUMBER WITH MOE REQUIRED TO MAKE 2400F-2.0E, 1800F-1.6E OR 1200F-1.2E MSR GRADES, BELOW

14 YRS	24 YRS
600 TPA 800 TPA	CONTROL
. V	10 day - 20
	*
	25
သ	Ċ,
3	9
20	7
%	TPA

LOBLOLLY PINE PLANTED 400, 600 AND 800 TPA AND 24 YEAR THINNED CONTROL	PLANTED 4	NTED 400, 600 AND 8	800 TPA AND	24 YEAR
		TR	TREATMENT	
MSR GRADE	14 YRS	14 YRS	14 YRS	24 YRS
	400 TPA	600 TPA	800 TPA	CONTROL
			%	dipodp oppoje en especia
2400F-2.0E	N	, 	· 0	A
1800F-1.6E	-	*		25
1200F-1.2E	21	30	39	45
BELOW MSR MIN, MOE	41	4	34	<u>~</u>
NO. 3 & 4 LUMBER	35	2	20	7

STUMPAGE VALUE (\$)	VALUE ALL PRODUCTS (\$) =	TOTAL LUMBER VOL. (BF) =	SAWLOG STEM VOL. (FT3) =	SAWLOG STEM WT. (LBS) =	IND. VARIABLE D	EQUATIONS FOR PREDICTING LOBLOLLY PINE TREE YIELDS AND VALUE BY TREATMENT
A+В (D ² ТНТ)	Α+Β̈ (D ² ΤΗΤ)	A+B (D ² THT)	A+В (D ² ТНТ)	A+B (D ² THΤ)	DEP. VARIABLE	DICTING LOBLO ALUE BY TREA
.87	. 88	855	.93	.93	R ²	TMENT

ASSUMPTIONS

PRODUCT VALUES

LUMBER - RANDOM LENGTH PRICES, NOV, 1997 LOBLOLLY - DENSE & NON-DENSE

PRICED SAME EXCEPT DSS

SLASH - DENSE & NON-DENSE PRICED

SEPARATELY

WOOD CHIPS = \$28 / TON

BARK SAWDUST # \$15 / TON # \$15 / TON

COSTS.

AVG. CUT & HALL COST = \$18 / TON

AVG. LUMBER & RESIDUE MANUFACTURING = \$120 / MBF

IRR = 18%

SUMMARY OF ALL LOBLOLLY PINE TREES PER ACRE AND CHIPPING-SAW TREES >= 7.5 INCHES DBH PER ACRE FOR SPACING PLOTS ON B.F. GRANT AND CONTROL STAND IN **1997 PRIOR TO THINNING**

2	8.0-15.0	-4	203	235	605 (CONT.)
58	7.5-10.7	æ .5	295	700	800
69	7.5-12.4	8.7	328	535	600
88	7.5-11.7	9.5	328	395	400
TONS		8 8 8 8	NO.	NO.	NO.
1997 CHIP-SAW STEM WEIGHT	1997 CHIP-SAW DBH RANGE	CHIP D AVG.	1997 TPA CHIP-SAW	1997 TPA ALL TREES	INITIAL STOCKING TPA

J DRY MILL TALLY

UNTHINNED LOBLOLLY PINE PLANTED 400, 600 AND 800 TPA PREDICTED LUMBER YIELD, VALUE OF ALL PRODUCTS, AND BREAKEVEN STUMPAGE VALUE PER ACRE FOR 14 YEAR AND 24 YEAR THINNED CONTROL

			CHIPPING-SAW TREES / ACRE	SAWT	REES / /	CRE	
	•					WALUE / ACRE	ACRE
TREATMENT	APG.		Male		CHARLE	£	ALL BAEAKEVEN
	De N	TPA	Ą	WY.	MANUTOA	PRODUCTS	STUMPAGE
	7	NO.	OC#	748	Men	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
400 TPA	99 . O1	328	26.66	88	14.8	6,863	3,144
600 TPA	8.7	328	21.08	89	12.5	6,192	2,919
800 TPA		295	17.65	8	10.8	6,167	2,379
CONTROL	-4	203	37.98	119	24.2	12,327	7,109
y MILL TALLY							

SLASH PINE TREATMENTS

PMRC SITE PREPARATION AND SOIL TYPE STUDY

PLANTED IN 1979-1980 AT 8X10 SPACING = 545 TPA SAMPLED 8 INST. IN 1997, HARVESTED 4 TREES / PLOT / INST

- 1. CHOP, BURN, BED, WEED CONTROL (HERBICIDE)
- 2. CHOP, BURN, BED, WEED CONTROL, FERTILIZE (HERB/FERT) 250 LBSIACRE DIAMMONIUM PHOSPHATE 1ST & 12TH YR.

OPERATIONAL CONTROL, PLANTED 1973 AT 605 TPA NO WEED CONTROL, NO FERTILIZATION, UNTHINNED HARVESTED AT AGE 24

YEAR UNTHINNED LOBLOLLY PLANTED 400, 600 AND 800 TPA
AND 24 YEAR THINNED CONTROL AVERAGE TONS OF SAWLOG STEMS PER MBF OF LUMBER, VALUE OF ALL PRODUCTS PER TON OF SAWLOG STEM, BREAKEVEN STUMPAGE PER TON OF SAWLOG STEM FOR 14

	CONTROL	800 TPA	600 TPA	400 TPA		TREATMENT		
	4.9		Çī Ü	ÇT CO	NO.	TONS / MBF	CHIP	
	104	89	90	80	\$ / TON	VALUE ALL PRODUCTS	CHIPPING-SAW STEMS / ACRE	
	60	41	42	37	\$1TON	BREAKEVEN STUMPAGE	S / ACRE	

NUMBER OF SLASH PINE SAMPLE TREES PROCESSED INTO LUMBER BY TREATMENT AND DBH CLASS

CONTROL	HERB / FERT	HERBICIDE		TREATMENT	
3	16	19	8 8	09	
<u></u>	ð	2		9	ad
00	O	~	NO	10	DBH CLASS (IN.)
2		8	3 9 8 8	11+	(IN.)
32	32	32	8	TOTAL	

M LUMBER, CHIPS, SAV/DUST, BARK

SAW MERCH HT. (FT.) DBH (IN) DIB @ MERCH HT. (IN.) TOTAL HT. (FT.) CHARACTERISTICS FORM CLASS NUMBER AVERAGE TREE CHARACTERISTICS OF SLASH PINE SAMPLE TREES BY TREATMENTS 17 YR. HERBICIDE 25.6 5.2 8.6 60 32 72 HERB/FERT 17 YR. 26.4 5.3 8.7 9 32 TREATMENTS 24 YR. CONTROL 26.7 5.4 9 73 64 32

AVERAGE BARK PROPORTION BY WEIGHT, SPECIFIC GRAVITY AND MOISTURE CONTENT OF SLASH PINE SAMPLE TREE SAWLOG STEMS BY TREATMENT	
--	--

TRE	TREATMENT		
	11	TREATMENTS	TO THE PROPERTY OF THE PROPERT
BARK PROPERTIES	17 YR HERBICIDE	17 YR HERBIFERT	24 YR CONTROL
PROPORTION BY WT. (%)	16.0	ਹੀ ਹੈ	-A.7
SPECIFIC GRAVITY	့ . ယ ဇာ	.37	.37
MOISTURE CONTENT (DRY) (%)	<i>5</i> 5 3 3	UT CO	60
MOISTURE CONTENT (GN)) (%)	36	ယ ၒာ	<u>အ</u> 6
	ACCHARICATION AND AND AND AND AND AND AND AND AND AN	Annes erfréske zerfentes gezakaaperte film ja mannes kennetes	described and described and an analysis of the second and the seco

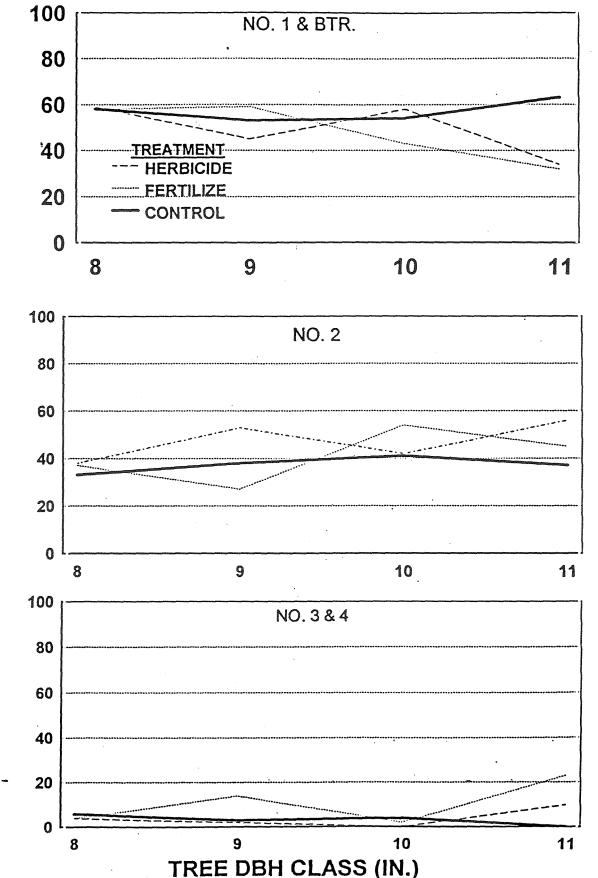
AVERAGE WOOD SPECIFIC GRAVITY AND MOISTURE CONTENT OF SLASH PINE SAMPLE TREE SAWLOG STEMS BY TREATMENT

Name of the Owner, which the Park of the Owner, where the Owner, which is the Owner, which is the Owner, where the Owner, which is the Ow	Constitution of the second	And the second section is a set only the second section in the second section is a second section in the second	
4	45	46	MOISTURE CONTENT (GN) (%)
81	84	86	MOISTURE CONTENT (DRY) (%)
.56	.53	53	SPECIFIC GRAVITY
24 YR CONTROL	TREATMENTS 17 YR 24 YR HERB/FERT CONTROL	17 YR HERBICIDE	WOOD PROPERTIES

AVERAGE GREEN WEIGHT OF WOOD AND WOOD AND BARK PER CUBIC FOOT OF WOOD FOR SLASH PINE SAMPLE TREE SAWLOG STEMS BY TREATMENT

	WOOD & BARK / FT WOOD	WOOD / FT WOOD			
	72.5	6 1.	***************************************	17 YR HERBICIDE	Market Market and Committee on State of the Committee of
	71.6	60.9	Ib/ft³	17 YR 17 YR 24 YR HERBICIDE HERB / FERT CONTROL	TREATMENTS
•	72.9	62.5	8 8 9 9 9 8 8	24 YR CONTROL	5

PROPORTION OF LUMBER BY LUMBER GRADE AND DBH CLASS FOR 17 YEAR SLASH PINE CHIPPING SAW TREES SAMPLED FROM HERBICIDE AND HERBICIDE / FERTILIZE PLOTS AND 24 YEAR CONTROL



PROPORTION OF LUMBER (%)

AVERAGE PROPORTION OF LUMBER BY LUMBER GRADE FOR SLASH PINE CHIPPING SAW SAMPLE TREES BY TREATMENT

CONTRACTOR OF THE PROPERTY OF	ости и при при при при при при при при при	AND THE REAL PROPERTY AND THE PERSON	COMMUNICATION CONTRACTOR AND
A	CO	ω	NO. 3 & 4
37	37	#	NO. 2
59	ST ST	53	NO. 1 & BTR.
9 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9		\$ 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
24 YR CONTROL	17 YR 24 YR HERB/FERT CONTROL	17 YR HERBICIDE	LUMBER GRADE
	REATMENTS		

AVERAGE PROPORTION OF TOTAL LUMBER GRADED
BELOW NO. 2 BY CAUSAL TYPE DEFECT FOR 17 YEAR
UNTHINNED HERBICIDE AND HERBICIDE / FERTILIZED SLASH
PINE AND 24 YEAR UNTHINNED CONTROL

-		TREATMENT	No. Commence of the commence o
DEFECT TYPE	17 YR HERBICIDE	17 YR HERB / FERT	24 YR. CONTROL
-	\$ 8 8 8		8 8 8 8 8
WANE, SKIP	2	ယ	2
DRYING (BOW, TWIST, CROOK)	0.5	N	N
< 15 % LATEWOOD	lma	desa	0
KNOTS	-2	0.5	0

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AVERAGE MAXIMUM KNOT DIAMETER, AVERAGE KNOT DIAMETER, AND KNOT COUNT PER SAWLOG FOR 17 YEAR UNTHINNED HERBICIDE AND HERBICIDE / FERTILIZE SLASH PINE AND 24 YEAR UNTHINNED CONTROL

	AVG. MAX KNOT DIA. (IN.)	AVG. KNOT DIAMETER (IN.)	KNOT COUNT (NC.)	SAWLOG KNOT CHARACTERISTICS
	N.)	ER (N.)		
	<u>.</u>	0.8	ð	17 YR HERBICIDE
	 	0.8	17	TREATMENT 17 YR HERB / FERT
	1.6	0.9	3	24 YR.

															_
Y WHEN IN COMPLIANCE APPR REQUIRED GRADE AVG. MOE	% BELOW GRADE MOE	AVG. LUMBER MOE MPSI)	GR	% BELOW GRADE MOE	AVG. LUMBER MOE (MPSI)	GR	% BELOW GRADE MOE	AVG. LUMBER MOE MPSI)	GR		•	WITH MOE BELO	LUMBER BY VIS	AVERAGE M	
I WHEN IN COMPLIANCE APPROX. 50% OF LUMBER WOULD BE BELOW REQUIRED GRADE AVG.MOE	MOE 72 67	DE MPSI) 1.37 1.38	GRADE NO. 2 - AVG. MOE REQUIRED 1.6 MPSI	MOE 71 81	(MPSI) 1.46 1.44	GRADE NO. 1 - AVG. MOE REQUIRED 1.7 MPSI	™OE ³ 75 50	DE (MPSI) 1.79 1.99	GRADE DSS - AVG. MOE REQUIRED 1.9 MPSI	17 YR. 17 YR. HERBICIDE HERBIFERT	TREATMENT	WITH MOE BELOW AVERAGE REQUIRED FOR GRADE BY TREATMENT	LUMBER BY VISUAL LUMBER GRADE AND PROPORTION OF LUMBER	AVERAGE MCE BASED ON E-COMPUTER FOR SLASH PINE 8/4	=======================================
	48	1.57	2	63	1.63	2	40	1.98		24 YR. T CONTROL		Y TREATMENT	N OF LUMBER	H PINE 8/4	

PROPORTION OF NO. 2 & BTR 8/4 LUMBER WITH MOE REQUIRED TO MAKE 2400F-2.0E, 1800F-1.8E OR 1200F-1.2E MSR GRADES, BELOW MSR GRADE OR GRADED NO. 3 OR 4 FOR 17 YEAR UNTHINNED HERBICIDE AND HERBICIDE/FERTILIZE SLASH PINE AND 24 YEAR

	UNTHINNED CONTROL TREA	TROL	
MSR GRADE	17 YR HERBICIDE	17 YR HERB / FERT	24 YR CONTROL
2400F-2.0E	23		රා
1800F-1.6E	28	ဒ္ဓ	4
1200F-1.2E	32	27	~ O
BELOW MSR MIN. MOE	ಎ	2	N
NO. 3 & 4 LUMBER	4	တ	A

HERB/FERT 480 CONTROL 375	HERBICIDE 481	NO.	1997 TPA TREATMENT ALL TREE	FOR HERBICIDE AND HERBICIDE / FERTILIZE PLOTS AND CONTROL STAND IN 1997 PRIOR TO THINNING
224 156	179	NO.	1997 1997 1997 1997 TPA CHIP-SAW ALL TREES >= 7.5 IN. DBH AVG.	AND HERBICI STAND IN 1997
8.0	8.3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1997 CHIP-SAW DBH AVG. R	DE / FERT 7 PRIOR T
7.5-11.3 41 7.5-16-0 22	7.5-10.9	8 8 8 9 9	ANGE	O THINNII
2 2	3	TONS	1997 CHIP-SAW STEM WEIGHT	STS

EQUATIONS FOR PREDICTING SLASH PINE TREE YIELDS AND VALUE BY TREATMENT

DEP. VARIABLE	고.
A+Β (D ² THT)	.91
A+В (D ² ТНТ)	.92
A+B (D ² THT)	86
A+В (D ² ТНТ)	.85
A+В (D ² ТНТ)	.84
	. VARIABLE в (р ² тнт) в (р ² тнт)

PREDICTED LUMBER YIELD, VALUE OF ALL PRODUCTS, AND BREAKEVEN STUMPAGE VALUE PER ACRE FOR 17 YEAR HERBICIDE AND HERBICIDE / FERTILIZED SLASH PINE AND 24 YEAR UNTHINNED CONTROL

UMILL TALLY UMBER, CHIPS, SAWDUST, BARK	CONTROL	HERBICIDE	TREATMENT	
SAWDUST	,50 4.8 0		AVQ	
r, Bark	156 5.85 22	NO.	TPA	
	11.50 5. 8.5	ecr 9.22	WOL POP	
	'n		N N	_
	2 4	34 34	SAW.	
	9. 6.9	5.4 5.4	CHIPPING SAW TREES / ACRE	
	6.9 3,775 1,795 3.6 2,/35 /,005	2,945 1,34		
	1,795 / 005	1,347	BREAKEVEN 2) STUMPAGE	

AVERAGE TONS OF SAWLOG STEMS PER MBF OF LUMBER, VALUE OF ALL PRODUCTS PER TON OF SAWLOG STEM, AND BREAKEVEN STUMPAGE PER TON OF SAWLOG STEM FOR 17 YEAR UNTHINNED HERBICIDE AND HERBICIDE / FERTLIZED SLASH PINE AND 24 YEAR UNTHINNED CONTROL

		CHARACE	Accounting a control of the control
	CHIPPI	CHIPPING-SAW STEMS / ACRE	/ ACRE
TREATMENT	TONS / MBF 1/	VALUE ALL PRODUCTS	BREAKEVEN
	NO.	\$ / TON	\$/TON
HERBICIDE	6.3	87	40
HERB / FERT	Ø. Ø	92	4
CONTROL	6,)	97	9%
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E LUMBER, CHIPS, SAWDUST, BARK

CONCLUSIONS

14 YEAR LOBLOLLY PINE SITE PREP STUDY

- 4. AVERAGE STUMPAGE FOR 400 TPA WAS 12% LESS PER TON THAN THAT OF 600 TPA AND 10% LESS THAN THAT OF 800 TPA PLOTS
- 5. LUMBER GRADE YIELDS ARE LOWER FOR 400 TPA BECAUSE WIDER SPACING STIMULATES PERSISTANT LARGER BRANCHES IN LOBLOLLY PINE.
- 6. ONLY 24% OF THE NO. 2 & BTR. LUMBER FROM THE 400 TPA, 35% FROM THE 600 TPA AND 40% FROM THE 800 TPA HAD THE REQUIRED STIFFNESS TO MEET MSR GRADES COMPARED TO 74% FOR THE 24 YEAR THINNED CONTROL

CONCLUSIONS

14 YEAR LOBLOLLY PINE SITE PREP STUDY

- 1. INITIAL STOCKING DID NOT SIGNIFICANTLY INFLUENCE WOOD SG, MC OR WT / FT
- 2. INITIAL STOCKING SIGNIFICANTLY INFLUENCED VISUAL GRADE LUMBER GRADED YIELD.
- 3. TREES IN 400 TPA PLOTS YIELDED 34 % NO. 3 & 4 LUMBER COMPARED TO 20 % FOR THE 600 TPA PLOTS AND 24 % FOR THE 800 TPA PLOTS

CONCLUSIONS

17 YEAR SLASH PINE SITE PREP STUDY

- 1. HERBICIDE OR HERBICIDE /FERTILIZE, TREATMENTS DID NOT SIGNIFICANTLY INFLUENCE WOOD SG, MC OR WT / FT 3
- 2. HERBICIDE, HERBICIDE / FERTILIZE, AND CONTROL
 TREATMENTS DID NOT SIGNIFICANTLY INFLUENCE
 PROPORTION OF VISUALLY GRADED LUMBER BY LUMBER
 GRADE
- 3. 24 YEAR CONTROLS PRODUCED A SIGNIFICANTLY HIGHER PROPORTION OF DENSE (D\$S, ID, 2D) GRADE LUMBER'
 THAN 17 YEAR HERBICIDE OR HERB / FERT TREES

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		6. 83 % OF THE NO. 2 & BTR. LUMBER FROM THE HERBICIDE PLOTS, 82 % FROM THE HERB / FERT PLOTS HAD THE REQUIRED STIFFNESS TO MEET MSR GRADES COMPARED TO 94 % FOR THE 24 YEAR UNTHINNED CONTROL.	5. REASON FOR STUMPAGE / TON DIFFERENCE IS HERB / FERT TREATMENT TREES HAD A HIGHER LRF FOR 8 AND 9 INCH TREES	4. AVERAGE STUMPAGE / TON / ACRE WAS 10 % LESS FOR HERBICIDE / FERTILIZE TREES	CONCLUSIONS 17 YEAR SLASH PINE SITE PREP STUDY
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Presented at: PMRC Annual Meeting, March 3, 1998, Athens, GA by: A.Clark, USDA, FS, SRS; T. Faust, B. Shiver; L. Pienaar; UGA Page 14

TABLE 1-YIELD OF PULPWOOD AND LUMBER AND STUMPAGE VALUE FOR ALL TREES, PULPWOOD TREES AND CHIPPING-SAW TREES PER ACRE FOR 14 YEAR UNTHINNED LOBLOLLY PINE PLANTED 400, 600, 800 TPA AND 24 YEAR THINNED OPERATIONAL CONTROL IN THE PIEDMONT OF GEORGIA.

CONTROL	800 TPA	600 TPA	400 TPA		ALL T TREATMENT TPA AVG DBH
205	700	535	395	NO.	TPA
	7.2	7.9		Z.	ALL TREES AVG ST DBH WE
134.3	133.6	124.4	120.3	TONS	REES STEM WEIGHT 3 IN. TOP "
ω	365	198	65	NO.	TPA
7.0	о Д	G.G	<u>ග</u> .	Z	PULPW AVG
O .သ	50.0	28.4	10.6	IN. TONS	PULPWOOD TREES 21 AVG STEM STUM DBH WEIGH VAL 3 IN. TOP PER
4	563	320	119	€∕	PULPWOOD TREES TO AVG STEM STUMPAGE DBH WEIGH VALUE
203	295	328	328	NO.	TPA
203 11.1	.5 .5	8.7	9.5	Ž	TPA AVG
118.8	58.5	68.8	86.0	TONS	CHIPPING-SAM STEM (WEIGHT CHIP-SAW)PULP 6 IN TOP(6-3 IN TOP
15.2	25.1	27.2	23.7	ONS TONS	CHIPPING-SAW TREES WITTEM LEVEIGHT CHIPPING SAW TOP (6-3 IN TOP VOLUME
24.2	10.6	12.5		MBF	CHIPPING SAW VOLUME
7,280	2,662	3,226	3,411	€	CHIPPING-SAW TREES WELL STEM LWEIGHT CHIPPING STUMPAGE CHIP-SAW)PULP SAW VALUE OF IN TOP 6-3 IN TOP VOLUME OF PER ACRE
7,284	3,225	3,546	3,530	en	ALL TREES STUMPAGE VALUE PER ACRE

[&]quot;STEM WEIGHT TO 3 IN. DOB TOP FOR TREES ≥ 5.0 IN. DBH

^{2/}TREES ≥ 5.0 AND < 7.5 IN. DBH ^{3/}TREES ≥ 7.5 IN. DBH

W DRY MILL LUMBER TALLY

TABLE 2-YIELD OF PULPWOOD AND LUMBER AND STUMPAGE VALUE FOR ALL TREES, PULPWOOD TREES AND CHIPPING-SAW TREES PER ACRE FOR 17 YEAR HERBICIDE, HERBICIDE/FERTILIZE AND 24 YEAR UNTHINNED OPERATIONAL CONTROL SLASH PINE IN NORTH FLORIDA.

**************************************		ALL TREES	REES	Defende named or other second	PULP	PULPWOOD TREES 27	EES ^{2/}	SEEMANDOORMANATA	SWINSTERNATION	유	CHIPPING-SAW TREES 3	TREES W		ALL TREES
TREATMENT TPA AVG	TPA	AVG	STEM	TPA	AVG	STEM	STEM STUMPAGE	TPA	AVG	STEM	WEIGHT	CHIPPING	TPA AVG STEM WEIGHT CHIPPING STUMPAGE STUMPAGE	STUMPAGE
		DBH	WEIGHT		DBH	DBH WEIGHT	VALUE		HBG	CHIP-S	CHIP-SAMEPULP	SAW	VALUE	VALUE
			3 IN. TOP "			3 IN. TOP	3 IN. TOP PER ACRE			6 IN TOP	6-3 IN TOP	VOLUME 4	IN TOP(6-3 IN TOP VOLUME " PER ACRE	PER ACRE
	Ņ O	NO.	TONS	N O	Z	TONS	€S	NO.	NO. IN. TO	TONS	ONS TONS	MBF	s	45
HERBICIDE	461	7.0	88.4	254	6. 5	36.6	478	179	ထ သ	33.6	18.2	5.4	1,585	2,063
HERB/FERT	481	7.2	95.9	228	Ö.	32.5	425	224	8.4	41.3	22.1	6.9	2,084	2,509
CONTROL	375	66	61.3	88	6.1	23.4	307	156 8.0	8.0	21.9	16.0	ა. ნ	1,214	1,521
			W0000000000000000000000000000000000000	Anderson and the second										

[&]quot;STEM WEIGHT TO 3 IN. DOB TOP FOR TREES ≥ 5.0 IN. DBH

²⁴ TREES ≥ 5.0 AND < 7.5 IN. DBH ³⁴ TREES ≥ 7.5 IN. DBH

W DRY MILL LUMBER TALLY